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## Mole Street Journal, September 2013

University of Arkansas, Fayetteville. Dept. of Chemistry and Biochemistry

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# The Mole Street Journal

Department of Chemistry and Biochemistry

Volume 12, Issue 9

September 2013

## Chemistry Department Welcomes Six New Graduate Students

The Department of Chemistry & Biochemistry is pleased to welcome six new graduate students for the fall semester.



**Dustin Baucom**

Hometown:  
Tahlequah, OK

B.S. Northeastern  
State University



**Adair Claycomb**

Hometown:  
Warren, AR

B.S. University of  
Arkansas at Monticello



**Gage Coltrain**

Hometown:  
Sapulpa, OK

B.S. Northeastern  
State University



**Foyshal Khan**

Hometown:  
Dhaka, Bangladesh

B.S. University of  
Dhaka



**Marissa Reynolds**

Hometown:  
Harrison, AR

B.S. Arkansas Tech  
University



**Yinling Zhang**

Hometown:  
Changchun, Jilin,  
China

B.S. Jilin University

### Special points of interest:

- Faculty and Student presentations and publications
- Sakon patent
- NSF grants awarded
- Tian student honored

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Faculty receive NSF grants	3
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## Faculty News

### On the Go

**Chen, J.; Taylor, E.; Chen, S.; Mathurin, L.** Synthesis of Cu-Pt Bimetallic Nanostructure for Electro-Oxidation of Alcohol, Cluser, Nanocrystals & Nanostructures, GRC at Mt. Holyoke College, South Hadley, MA; Poster (August 4-9, 2013).

**Mya Norman** attended the Wally Cordes Teaching and Faculty Support Center's Teaching Camp at the Winthrop Rockefeller Center from 8/3-8/5/13. She did a presentation with Tim Kral on teaching large classes. **Neil Allison** also attended and made a presentation.

### Publications

**Reena Chandrashekar** and **Paul D. Adams**. Prospective Development of Small Molecule Targets to Oncogenic Ras Proteins. *Open Journal of Biophysics*, Vol. 3, #4 in press, 2013.

**Taylor, E., Chen, S.;** Tao, J.; Wu, L. Zhu, Y.; **Chen, J.** Synthesis of Pt-Cu Nanodendrites by Controlling Reduction Kinetics for Enhanced Electro-Oxidation of Methanol. *ChemSusChem* 2013, accepted.

Jeon, M.; **Jenkins, S.V.**, Oh, J.; Kim, J.; Peterson, T.; **Chen, J.** Kim, C. Nonionizing Photoacoustic Cytography with Near-Infrared Absorbing Gold Nanostructures as Optical-Opaque Tracers, *Nanomedicine*, in

press.

M.-C. Chalbot, G. Nikolic, V. Etyemezian, D.W. Dubois, J. King, D. Shafer, G. Gamboa da Costa, **J.F. Hinton**, I.G. Kavouras. Soil humic-like organic compounds in prescribed fire emissions using nuclear magnetic resonance spectroscopy. *Environmental Pollution*, 181, 167-171, 2013.

The **McIntosh** Lab group photo was mentioned in the chemistry blog Justlikecooking, chemistry-related hijinks, hoopla, and skullduggery. The discussion of the day was the evolution of group photos. Visit <http://justlikecooking.blogspot.com/2013/07/friday-fun-say-cheese.html> to see the blog.

## University Awarded Patent

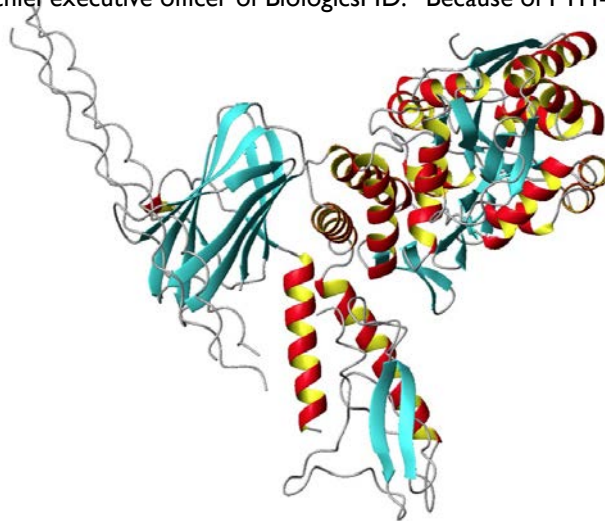
The U.S. Patent and Trademark Office has issued a full patent for a treatment for osteoporosis and other bone-related maladies that was developed in part through research at the University of Arkansas.

**Joshua Sakon**, an associate professor of chemistry and biochemistry at the U of A, is one of three co-inventors of the pharmaceutical now known as PTH-CBD. The patent, titled "Fusion Proteins of Collagen Binding-Domain and Parathyroid Hormone," was issued to University of Arkansas System Board of Trustees, the Oschner Clinic Foundation and the National University Corporation Kagawa University in Japan.

BiologicsMD, a drug discovery firm at the Arkansas Research and Technology Park, holds the exclusive license to PTH-CBD and is developing the pharmaceutical as a novel and unique treatment for osteoporosis and other bone-related disorders.

"This is the first U.S. patent to issue from a patent family related to PTH-CBD and its use in treating diseases of the bone and other collagen-related disorders," said J. David Owens, chief executive officer of BiologicsMD. "Because of PTH-CBD's unique profile of selective targeting and other pharmacologic properties, we foresee a highly differentiated new product to help treat human disease."

BiologicsMD is a portfolio company of VIC Technology Venture Development, a client of the University of Arkansas Technology Development Foundation, which operates the research park in Fayetteville. BiologicsMD was founded in 2010 and has been awarded a \$2.3 million research contract from the U.S. Department of Defense.



Published by University Relations on the University of Arkansas Newswire, August 20, 2013.

## Faculty Secure NSF Grants

**Roger Koeppe** and **Denise Greathouse** have been awarded three-year funding from the National Science Foundation, Division of Molecular and Cellular Biosciences, for a project entitled "Ionizable Residue Interactions in Tilted Transmembrane Helices." Key background results for this project were published in Proc. Natl. Acad. Sci., U.S.A. 110, 1692-1695 (2013), "Buried lysine, but not arginine, titrates and alters transmembrane helix tilt," by **Nicholas J. Gleason, Vitaly V. Vostrikov, Denise V. Greathouse** and **Roger E. Koeppe**.

**Susanne Striegler** received note that the project 'Microgel catalysts mimicking glycosidases' is recommended for funding by the Macromolecular, Supramolecular and Nanochemistry Program of the Chemistry Division at the National Science Foundation. The studies proposed will evaluate glyconoamines as putative transition state analogs of glycoside hydrolysis reactions, evaluate copper(II) complexes as catalysts for glycoside hydrolysis in alkaline solution and investigate microgels catalysts derived from inverse miniemulsions. The research encompasses synthesis, spectroscopic evaluation, molecular recognition and material science and provides training opportunities for undergraduate and graduate students. The proposed catalysts are of outstanding scientific and industrial interest and are expected to provide a novel platform for a shortened synthesis of glycoconjugates and biomarkers of potential pharmacological importance as a long term goal.



## On the Big Screen

**Matt McIntosh** is pictured at left getting makeup applied in preparation for a shoot by University Relations for a commercial for UA that will be shown during televised football games. His undergraduate student researchers **Sydney Wells** and **Erin Jeffrey** had starring roles.

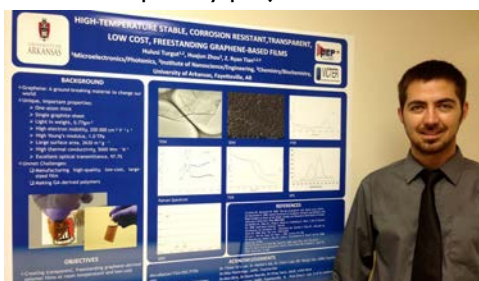
## Wilkins to Present Lectures

**Charles Wilkins** will be presenting Award lectures on the occasion of his receiving the American Chemical Society Division of Analytical Chemistry 2013 Award in Chemical Instrumentation (see Mole Street Journal, March 2013 for details). The first will be at the 246th American Chemical Society National Meeting in Indianapolis, IN, September 10, entitled "Hyphenated Analysis Methods: Past and Future." The second will be at the SciX Meeting (FACSS 40th National Meeting) in Milwaukee, WI, October 1, entitled "Hyphenated Analysis Methods: Past, Present and Future." Other speakers at the half-day award symposium at the SciX meeting will be Alan Marshall (Florida State University), Gary Hieftje (Indiana University), Peter Griffiths (University of Idaho), and Bill Heineman (University of Cincinnati).



## Student Presents Poster

**Hulsi Turgut**, MicroEP graduate student in the **Tian** lab, presented a poster at the NSF-EPSCoR 2013 Conference in Little Rock. This poster was rated by the external advisory board as one of the best five and recommended as the priority project for the state.



Ever hear of the **Blacklist**? Ever wonder how our campus gets on the blacklist? From *Wikipedia*: In computing, a blacklist or block list is a basic access control mechanism that allows access through all elements (email addresses, users, URLs, etc.), except those explicitly mentioned. Those items on the list are denied access. The

opposite is a whitelist, which means only items on the list are let through whatever gate is being used.

### How it happens:

Blacklisted



Spam from our servers



Compromised Account



Phishing

### Phishing works because people

can't tell the difference between real and fake announcements.

### How can we get off the blacklist?

1. Learn to recognize real vs. fake email
2. Watch for unusual login activity
3. Information Security is constantly monitoring the campus status on the blacklists

### Other critical steps to protect your computer:

1. Make sure to use the appropriate current anti-virus software provided by the UA.
2. Make sure your Windows, Apple, or Linux systems are fully patched.
3. Immediately forward suspicious email as an attachment to security@uark.edu for analysis.
4. Ask your tech support for help if you have a virus.
5. Always keep your password(s) safeguarded!

(Some of the material provided in this tip was prepared by Don Faulkner UA Info Security Team Lead)



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Department of Chemistry and  
Biochemistry University of Arkansas

## Safety Tip: by Bill Durham

It's the beginning of a new school year and a good time to do many of those once a year chores. Include checking and replenishing your first aid kit in those things to do. You might also include locating it.

  
**Department of Chemistry  
and Biochemistry**

## Excellence in the Central Science

### What Did You Do on Your Summer Vacation?

Jacqueline and Scott Morris went to the Dominican Republic July 31-August 7. They flew into Santo Domingo and their ministry took place in San Pedro. Traveling with a Christian organization called "Beyond the Game," Scott focused on baseball ministry (doing baseball clinics with other missionaries and sharing the Gospel) and Jacqueline focused on vacation Bible school and a Christian women's conference with the other female missionaries on the trip. The entire team was composed of 23 members. They also visited a village struck by immense poverty called the Haitian Batey. They were able to provide water filters and buckets so that the citizens could have clean water to drink.

They enjoyed the trip so much, they are planning on a repeat trip next year.



*The department of chemistry and biochemistry at the University of Arkansas strives for excellence in research, teaching and service in chemistry - the central science. We aspire to positions of leadership regarding the discovery of new scientific knowledge, the training of students, and the economic development of the State of Arkansas. We seek to recruit and retain a diverse group of the best faculty, students and staff to address the challenges of the future through interdisciplinary and multidisciplinary research and education.*

## Calendar of Events

### September

- 6 **CUME**, 5-6 p.m., CHEM 144
- 16 Seminar, Peter Andreana, Univ. of Toledo, 3:30 p.m., CHEM 144
- 21 Registration Deadline for INBRE Conference
- 23 Seminar, Marc R. Knecht, Univ. of Miami, 3:30 p.m., CHEM 144
- 27 **CUME**, 5-6 p.m., CHEM 144
- 30 Seminar, Alexi Demchenko, Univ. of MO-St. Louis, 3:30 p.m., CHEM 144

To be included in the Fall 2013 All-University Commencement Program, you should apply for graduation by October 1, 2013.



### Save the Date!

The 2013 INBRE conference will be held October 18-19 in Fayetteville, AR. Please be sure to register for the conference! Visit <http://chemistry.uark.edu/INBRE/3642.htm> for all conference information, abstract submission, and registration.

## Library Hours

CHBC Library (CHEM 225)  
<http://libinfo.uark.edu/chemistry>  
575-2557

### Fall Semester Hours: August 26—December 19

Monday—Thursday	8 a.m.-9 p.m.
Friday	8 a.m.-6 p.m.
Saturday—Sunday	Closed
LABOR DAY (Sept. 2)	Closed

The chemistry and biochemistry library resources can be accessed in the following LibGuides: <http://uark.libguides.com/content.php?pid=110953>. Please bookmark for future use. Theses and dissertation resources can be found on the following LibGuide: <http://uark.libguides.com/content.php?pid=123035&sid=1057466>.

